

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)
(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference H0006155-PCT | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/US2004/029387 | International filing date (<i>day/month/year</i>) 10 September 2004 | Priority date (<i>day/month/year</i>) 11 September 2003 |
| International Patent Classification (IPC) or national classification and IPC Int. Cl. C23C 14/56 (2006.01) C23C 14/34 (2006.01) B08B 7/00 (2006.01) C23C 16/44 (2006.01) | | |
| Applicant HONEYWELL INTERNATIONAL INC. et al | | |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of **5** sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☐ (*sent to the applicant and to the International Bureau*) a total of sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
- | | |
|--|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input checked="" type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |

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|---|--|
| Date of submission of the demand 7 April 2005 | Date of completion of this report 21 November 2005 |
| Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 FACSIMILE NO. 571-273-3201 | Authorized Officer BLAINE R. COPENHEAVER Telephone No. 571-272-7444 |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2004/029387

Box No. I

Basis of the report

1. With regard to the language, this report is based on:

☒ The international application in the language in which it was filed

☐ A translation of the international application into _____, which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3(a) and 23.1 (b))

☐ publication of the international application (under Rule 12.4(a))

☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☒ the international application as originally filed/furnished

☐ the description:

pages as originally filed/furnished

pages* received by this Authority on

pages* received by this Authority on

☐ the claims:

pages as originally filed/furnished

pages* as amended (together with any statement) under Article 19

pages* received by this Authority on

pages* received by this Authority on

☐ the drawings:

pages as originally filed/furnished

pages* received by this Authority on

pages* received by this Authority on

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees the applicant has, within the applicable time limit:

- ☐ restricted the claims
- ☐ paid additional fees
- ☐ paid additional fees under protest and, where applicable, the protest fee
- ☐ paid additional fees under protest but the applicable protest fee was not paid
- ☒ neither restricted the claims nor paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:

- ☐ complied with.
- ☒ not complied with for the following reasons:

The set of claims contains 2 inventions which are not linked by a common inventive concept:

Claims 1 to 18 are directed to a method of treating a component of a deposition apparatus, the component having a first hardness, by bead blasting with particles having a greater or equal hardness, the particles consisting essentially of one or both metal alloy and elemental metal. The object of the method is to roughen the surface of a component of the deposition apparatus with blasting media which is compatible with the material of the component and the semiconductor devices being sputtered-deposited during the process, so as to avoid contamination of the components with the blasting material. The technical problem is solved by the use of metals and/or metal alloys having the same or greater hardness than the composition comprised by the components.

Claims 19 to 56 are directed to a method and corresponding product of forming a target/backing plate construction, providing a target, a backing plate and an insert, all having different compositions from each other, bonding the target, the backing plate and the insert in a configuration in which the insert is positioned between at least a portion of the target and the backing plate; the configuration having a surface which extends along a portion of the target and a portion of the insert;

Continued on Supplemental Sheet

4. Consequently, this report has been established in respect of the following parts of the international application:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1 to 18

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US2004/029387

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|----------------|-----|
| Novelty (N) | Claims 1 to 18 | YES |
| | Claims | NO |
| Inventive step (IS) | Claims 1 to 18 | YES |
| | Claims | NO |
| Industrial applicability (IA) | Claims 1 to 18 | YES |
| | Claims | NO |

2. Citations and explanations (Rule 70.7)

D1 = US 2002/042192
D2 = US 6428663
D3 = US 5505749

The invention as defined in the present claims is a method of treating a component of a deposition apparatus where a surface of the component is exposed to bead blasting with bead blasting media consisting of one or both of a metal alloy or an elemental metal particles having a hardness greater than or equal to the hardness of the component.

None of the cited documents either singly, nor in obvious combination, disclose or fairly suggest the invention as defined in the present claims. The claimed invention is therefore novel, has an inventive step and is industrially applicable.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: IV

and forming a particle trapping region comprising a pattern of curved projections which extends along the portion of the target, the curved projections forming cavities, at least some of the cavities opening laterally along the target/backing plate construction. The object of the method and corresponding product is to trap particles which deposit on a target/backing plate construction comprising an insert, during a deposition process. The technical problem is solved by a particle trapping region extending along the surface of portions of the target and the insert, the trapping region comprises a pattern of curved projections forming cavities and at least some of the cavities opening laterally along the target/backing plate construction.

These groups of claims are not linked by a common or corresponding special technical feature and define two different inventions not linked by a single general inventive concept.